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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/824,696	04/14/2004	Michael Louis Frank	10031537-1	6794

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AGILENT TECHNOLOGIES, INC.  
Legal Department, DL429  
Intellectual Property Administration  
P.O. Box 7599  
Loveland, CO 80537-0599

EXAMINER
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PERT, EVAN T

ART UNIT	PAPER NUMBER
2826	

DATE MAILED: 10/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

**Office Action Summary**

Application No.

10/824,696

Applicant(s)

FRANK, MICHAEL LOUIS

Examiner

Evan Pert

Art Unit

2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                                           |                                                                                         |
|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                               | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                      | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>0705</u> . | 6) <input type="checkbox"/> Other: _____                                                |

## DETAILED ACTION

### *Specification*

1. The specification (particularly [0025] with Fig. 6) is objected to under 37 CFR 1.71(a), as failing to comply with what is known as the “enablement requirement”:

The specification fails to comply with the enablement requirement for claim 3 because the specification does not adequately describe a “charge pump” with a coupler and detector that are “integrated” into a “semi-conducting substrate” [i.e. claim 3].

The only description of “charge pump 22” (CP in Fig. 6) is a block having two terminals with inadequate explanation given at [0025] of how a charge pump circuit is configured:

As evidence that the “charge pump” embodiment (i.e. claim 3) requires undue experimentation to implement, the examiner cites references that describe various implementations of a “charge pump” circuit, none of which have two terminals that can be substituted into applicant’s generalized Fig. 6 charge pump “CP 22”:

US 5,786,992 (dashed block 830 in Fig. 12A with resistor 860, capacitor 861, diode 862, capacitor 864 and diode 863).

US 5,658,132 (dashed block 711 in Fig. 7 with resistor 721, diode 720 and capacitor 719).

US 5,001,399 (cover figure with charge pump comprising capacitor 48, diode 49, diode 50, and capacitor 51).

US 5,036,229 (Figs. 1 and 3)

All four references above showing examples of a “charge pump” show the “charge pump” as having more than two terminals wherein applicant's Fig. 6 only shows two terminals. It is unclear what applicant's claimed “charge pump” configuration looks like, and requires undue experimentation to implement, since the “charge pump” is only described in block diagram form with two terminals.

The on-line encyclopedia, Wikipedia, explains that a “charge pump” is “an electronic circuit that uses capacitors as energy elements to convert low voltages into higher voltage outputs,” yet applicant does not adequately explain how to implement a “charge pump” as a circuit with two terminals, one being connected to a node shared with a coupler and detector (i.e. claim 3).

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 3 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement: Claim 3 contains inadequately described subject matter (i.e. a “charge pump” configured with a “detector” and a “coupler” at a “node” which are “integrated into” a “semi-conducting substrate”).

The charge pump configuration subject matter was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention without undue experimentation (see item 1 above).

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Crossley et al. (US 4,789,887).

See col. 3, lines 21-25, lines 45-50; col. 4, lines 18-20, and particularly col. 6, lines 15-17).

5. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Repke et al. (US 5,960,333).

See cover figure in view of col. 7, lines 50-54, with coupler 52, power amplifier 50, detector (i.e. diode 68) all integrated, as *implicitly* disclosed, on a semi-conducting substrate (i.e. "implemented within an integrated circuit of a CMOS-based process)

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Repke et al., as applied to claim 1 above, and further in view of Official Notice.

Repke et al. is silent about the inherent “semi-conducting substrate” of a “CMOS-based process” being “silicon” or “GaAs” (i.e. is silent about the material choice of the requisite semi-conducting substrate that is required to form the “preferred embodiment” (i.e. cover figure) circuit “within an integrated circuit” per col. 7, line 52).

The examiner takes Official Notice that the most common “semi-conducting substrate” for a “CMOS-based process” is a semiconductor such as “silicon.”

It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to adopt silicon for the suggested “CMOS-based process” of the Repke et al. reference, motivated by the common availability of silicon substrates commercially available for performing a CMOS-based process [see MPEP 2144].

7. Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuitenbrouwer et al. (US 6,542,375) in view of applicant’s admitted prior art.

The Kuitenbrouwer et al. reference discloses the idea of putting a coupler in a silicon substrate of an integrated circuit chip that senses “power/current,” yet the Kuitenbrouwer et al. reference is explicitly silent about a “detector” even though there is arguably an implication that the power/current in the coupler part in the sensing IC is detected by a “detector.”

Applicant’s admitted prior art [Figs. 1 and 2] explain that the two transmission lines depicted as “prior art” are never integrated into an integrated circuit in the prior art, yet are discussed as being “in a single IC” by the Kuitenbrouwer et al. reference [i.e. col. 1, lines 52-61].

It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to provide a detector integrated into the silicon circuit sensing chip invention disclosed in the Kuitenbrouwer et al. reference, motivated to allow the IC to provide "power/current sensing" using the integrated coupler [see MPEP 2144].

***Request for Information under Rule 105***

8. In accordance with 37 CFR 1.105, information regarding the claimed "charge pump" is requested. As indicated in this Office Action, prior art does not show a charge pump configured the way the block labeled "CP" in Fig. 6 is configured, and if "12" is a "coupler" and not a "capacitor" in Fig. 6, then what is the line connecting resistors 16?

This request for information is needed to determine if one of ordinary skill in the art at the time of applicant's filing could reasonably construct a "charge pump" circuit configured as shown in Fig. 6 for a integrated circuit having the charge pump, coupler, and detector, contrary to evidence presented for a lack of enablement (items 1 and 2 above).

***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Evan Pert whose telephone number is 571-272-1969. The examiner can normally be reached on M-F (7:30AM-3:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2826

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ETP  
October 7, 2005

  
**EVAN PERT**  
**PRIMARY EXAMINER**